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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YAT SUN OR

Appeal 2010-003181
Application 10/763,377
Technology Center 1600

Before BRADLEY R.GARRIS, LINDA M. GAUDETTE, and MELANIE L. McCOLLUM, *Administrative Patent Judges*.

McCOLLUM, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

This is an appeal under 35 U.S.C. § 134 involving claims to a process for achieving a bridged macrocyclic product. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

The application was previously subject to an appeal, which was decided on August 25, 2008. In this previous appeal, an obviousness rejection over Or (WO 99/21864 A1, May 6, 1999) was affirmed based on a conclusion that Or anticipated claim 1 (Dec. 8-10). Subsequent to the appeal, Appellant filed an Amendment, which among other things amended claim 1. In response to the Amendment, the Examiner issued an Office Action maintaining the obviousness rejection over Or. Appellant appeals this rejection.

Claims 1-12 and 16 are pending and on appeal (App. Br. 2). We will focus on claim 1, which reads as follows:

> 1. A process comprising the step of reacting a macrocyclic compound characterized by at least two nucleophilic moieties with a bifunctional bridging component characterized by its ability to form π-allyl metal complex in the presence of catalyst, *whereby each of two nucleophilic moieties of the macrocyclic compound reacts with said bifunctional bridging component,* thereby achieving a bridged macrocyclic product.

(Emphasis added to denote language added subsequent to the previous appeal.)

Claims 1-12 and 16 stand rejected under 35 U.S.C. § 103(a) as obvious in view of Or (Ans. 3).

Appellant contends that it would not "have been obvious to one of ordinary skill in the art, motivated to minimize process steps, to modify the process of Or *et al.* by selecting this group of steps and somehow arrive at the claimed process without even a secondary teaching suggesting a solution to the generalized motivation" (App. Br. 4).

ISSUE

Has the Examiner set forth a prima facie case that Or suggests reacting a macrocyclic compound having at least two nucleophilic moieties with a bifunctional bridging component having the ability to form π-allyl metal complex, whereby each of two nucleophilic moieties of the macrocyclic compound reacts with the bifunctional bridging component?

FINDINGS OF FACT

1. Or discloses 6,11-bridged erythromycin compounds having formulas (I) and (II) (Or, Abstract).

2. To make these compounds, Or discloses the methods illustrated in Schemes 1-3 (*id.* at 26 & 34-36).

3. In Scheme 1, Or discloses that the "6-hydroxy group of compound 3 is . . . alkylated by reaction with an alkylating agent in the presence of base to give compound 4," where R is preferably allyl (*id.* at 27-28 & 34).

4. In Scheme 2, Or discloses "treat[ment] with an excess of sodium hexamethyldisilazide or a hydride base in the presence of carbonyldiimidazole in an aprotic solvent for about 8 to about 24 hours at about -30 °C to room temperature to give compounds 10a and 10b" (*id.* at 29 & 35).

5. In Scheme 3, Or discloses reacting compounds 10a and 10b with a H_2N-$(CH_2)_m$-A-B-D-precursor compound "in the presence of a suitable base to give compounds 12a and 12b, respectively" (*id.* at 29 & 36). It is undisputed that, in this reaction, a nucleophilic moiety of the precursor

compound is reacting with an electrophilic moiety of the macrocyclic compound (App. Br. 5 & Ans. 5).

6. Or also discloses that "[o]nce compounds 12a and 12b have been prepared it is possible to close the ring and prepare compounds 14a and 14b," which is also depicted in Scheme 3 (*id.* at 32 & 36).

PRINCIPLES OF LAW

In determining obviousness, the "test asks not merely what the references disclose, but whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims." *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*

ANALYSIS

Or discloses a multi-step reaction for forming a bridged macrocyclic product (Findings of Fact 2-6). Although one of ordinary skill in the art may have been motivated by a desire to reduce the number of steps, we agree with Appellant that the Examiner has not set forth a prima facie case that it would have been obvious to rearrange Or's steps so that a macrocyclic compound having at least two nucleophilic moieties is reacted with a bifunctional bridging component having the ability to form π-allyl metal complex, whereby each of two nucleophilic moieties of the macrocyclic compound reacts with the bifunctional bridging component.

CONCLUSION

The Examiner has not set forth a prima facie case that Or suggests reacting a macrocyclic compound having at least two nucleophilic moieties with a bifunctional bridging component having the ability to form π-allyl metal complex, whereby each of two nucleophilic moieties of the macrocyclic compound reacts with the bifunctional bridging component. We therefore reverse the obviousness rejection of claim 1 and of claims 2-12 and 16, which depend from claim 1.

REVERSED

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